GLOSSARY OF DAIRY TERMINOLOGY

By

Tom Droppo

Dairy Cattle Specialist

Manitoba Agriculture

ACID DETERGENT FIBRE (A.D.F.): A term used to quantify the fibrous component of a forage. ADF consist primarily of lignin, cellulose and insoluble minerals and is highly correlated to forage dry matter digestibility.

ACID DETERGENT INSOLUBLE NITROGEN (A.D.I.N.): The nitrogen in a feed that occurs in the acid detergent fibre portion of the feed. This nitrogen is almost completely indigestible. ADIN content is used to estimate the amount of damage that has occurred to the forage protein as a result of improper storage.

ACIDOSIS: A disease condition resulting from the accummulation of acid or depletion of bicarbonate in the blood and body tissues. This is usually the result of a grain overload.

ALTERNATE PULSATION: The alternating cyclic movement of half the liners in a cluster with the liners in the other half.

ARTIFICIAL INSEMINATION (A.I.): The process of artificially breeding a cow.

BEST LINEAR UNBIASED PREDICTION (B.L.U.P.): A statistical procedure used to obtain the "best" prediction of a bull's genetic value for milk, fat, protein, type, etc.

BLEND MILK PRICE: The price of milk paid to producers derived from the blend of milk prices paid for fluid milk and that for milk intended for industrial uses.

BLIND QUARTER: A quarter that no longer produces milk as a result of injury, mastitis or other complications.

BOVINE SOMATOTROPHIN (B.S.T.): A hormone that is naturally produced in a dairy animal but is also synthetically produced for commercial use. It enhances various growth parameters and the productive potential of cows during lactation.

BREED CLASS AVERAGE (B.C.A.): An index used to express a cow's production as a percentage of the breed class standard. The base B.C.A. level is 100 which represents the average production level of officially tested cows between 1951 and 1954. B.C.A.'s are generated on milk, fat and protein.

BREED CLASS STANDARD: The standard to which a cow's milk, fat and protein production is compared to establish a B.C.A. Three factors are taken into account when establishing a B.C.A. They include breed, age at calving and month of calving.

BREEDING WHEEL: A wheel-shaped, record keeping system. Cows are identified with a magnet, tag or tack and placed on the surface of the wheel according to date of breeding, freshening, drying-off, etc.

BRISKET BOARD: A low board placed across a free-stall to prevent a cow from lying at the front of a stall.

BROOD COW: A cow which has proven her ability to be an outstanding producer of genetically superior offspring.

BULLING: A slang term to describe a cow that is approaching estrus or in estrus.

BYPASS PROTEIN: The proportion of a feed's protein that is not broken down to ammonia in the rumen but is digested in the true stomach and intestines and is absorbed into the animal's bloodstream.

CALIFORNIA MASTITIS TEST (C.M.T.): A cow-side paddle test for the detection of subclinical mastitis in individual quarters of a cow.

CALVING INTERVAL: The time frame between consecutive calvings.

CLAW: The sanitary manifold that spaces and connects the teat cup assemblies into a complete milking unit or cluster.

CLEAN-IN-PLACE (C.I.P.) SYSTEM: An automatic system for cleaning milk lines and other milk contact surfaces immediately following milking.

CLINICAL MASTITIS: A mastitis infection of the udder that is evident through visible signs such as swollen quarters, clots in milk and discolored, abnormal milk.

CLONING: The specialized tecnique of subdividing cellular and nuclear materials of a developing embryo to produce genotypically identical embryos.

CONTROLLED BREEDING: The process of using synthesized hormones to alter the normal estrous cycle of a cow to accommodate the breeding of a multitude of cows simultaneously or the collection and transfer of embryos from a donor cow to several recipients.

COLOSTRUM: The first milk of a cow following calving.

COW INDEX (C.I.): An estimate of a dairy animal's genetic value based on ancestorial production and type records in addition to the animal's own records when they become available.

CUBIC FEET PER MINUTE (C.F.M.): A standard term to express air flow rates in vacuum systems, in particular milking systems.

CYSTIC: A cow is referred to as being cystic when the follicle on the ovary becomes enlarged and fails to rupture.

DAILY ENTITLEMENT (D.E.): A term used to tell producers what volume of their milk shipments qualifies for the highest (premium) pool milk price. It is recalculated each dairy year. It is based on the average production for the period August 1 to December 31; this establishes the producer's entitlement to the premium pool milk price. The objective of having a D.E. mechanism is to act as an incentive to encourage winter milk production.

305-DAY PRODUCTION: The standardized lactation period by which cow records are expressed for individual performance evaluation, within herd rankings of cows and for sire evaluation purposes.

DAYS OPEN: The number of days between the day a cow calves and the day she conceives.

DEVIATION: Cows and bulls are evaluated and ranked genetically according to their difference or deviation from the herd or breed average.

DIRECT SIRE COMPARISON (D.S.C.): A method of comparing the records of a bull's daughters with their herdmates and subsequently expressing them as a production or type proof on the bull.

DISPLACED ABOMASUM (OR TWISTED STOMACH): A condition, characterized by loss of appetite, depression, dehydration and which may cause death, which occurs when the abomasum or true stomach of a cow is displaced from its normal position on the abdominal floor.

DONOR COW: A cow which has been selected to collect embryos from for future transplant into recipient cows. Donor cows are usually those with proven superiority for production and type.

DRY PERIOD: The time between lactations when a cow is not producing milk. Desirable dry period length is six to eight weeks.

DYSTOCIA: An abnormal labor and/or difficult birth.

EDEMA (or UDDER EDEMA): Swelling of the udder caused by inadequate blood circulation and abnormal accummulation of watery fluids. Usually occurs in the immediate period (two to four weeks) leading up to calving.

EMBRYO TRANSFER (E.T.): The specialized technique of collecting intact embryos from a donor cow and transferring and implanting them in a recipient cow (or surrogate mother).

ESTRUS (or HEAT): The period of the estrous cycle when a cow is receptive to being bred.

FAT CORRECTED MILK (F.C.M.): An adjustment of different milk samples with different fat percentages to equivalent amounts on an energy basis.

FAT COW SYNDROME: A metabolic disease of overfat cows which have enlarged fatty livers. It accounts for one of the reasons for downer cows at calving.

FIRST CALF HEIFER: A young dairy cow who has given birth only once.

FOREMILK: The first milk drawn from an udder.

FREE-STALL HOUSING: A housing system whereby cattle are not tied up and they can choose any stall they wish to lay down in.

FRESHENING: A slang term for the act of giving birth.

GRASS TETANY: A metabolic disorder caused by low blood magnesium. It occurs most often in older cows milking heavily and grazing lush pastures.

HARDWARE DISEASE: A disease of cattle resulting from the perforation of the forestomach or reticulum by a sharp object.

HEIFER: A young dairy female that could be in any stage of the growing phase and which has not produced a calf through birth.

HERITABILITY: The proportion of the total variation in a trait that is due to genetics.

INFLATION: The rubber part of the milking machine that comes in contact with the cow's teats.

INHIBITOR: Any substance that inhibits the growth of bacteria.

JOHNE'S DISEASE: An infectious disease of cattle, sheep and goats that is characterized by diarrhea, gradual weight loss and decreased production.

KETOSIS: A metabolic disease characterized by excessive ketone body formation and a high blood ketone level. Usually results from either marked underfeeding of cows or it may occur soon after a cow goes off feed. Occurs most commonly in high producing cows in early lactation.

LACTATION: The period of time when a cow is producing milk.

LAMINITIS: Lameness of the foot caused by injury, improper nutrition, sickness or a poor hoof trimming technique.

LATERAL SUSPENSORY LIGAMENT: A fibrous inelastic tissue that extends along both sides of the udder to the floor of the udder. It originates from tendons above and behind the udder. They act as one of the main supportive tissues of the udder.

LEUCOCYTES: White blood cells released by the cow's body as part of its disease defense mechanism. Leucocytes migrate to the udder and into the milk in response to an injury or the occurrence of a mastitis infection.

LINER SLIP (SQUAWK): An abnormal, undesirable situation during milking whereby the seal between the liner and the teat is temporarily broken thus allowing air admission into the system at the claw.

LIQUID NITROGEN: A liquid medium routinely used by A.I. technicians, studs and producers to store semen and embryos in a dormant, frozen state until required later for insemination or implantation. Liquid nitrogen turns to a vapor when the temperature rises above $-196^{\circ}C$ (or $-320^{\circ}F$). Beware of the incorrect use of the term liquid nitrogen to describe the field application of anhydrous ammonia which is a different compound.

MARKET CLEARING PRICE: The price at which dairy quota exchanges ownership on the monthly quota exchange.

MASTITIS: An inflammation of the mammary gland caused by bacteria or other organisms.

MATURE EQUIVALENT (M.E.): The official method of expressing a cow's lactation record in the United States. Through the use of correction factors, the lactation is converted to a mature cow basis.

MEDIAL SUSPENSORY LIGAMENT: An elastic supportive tissue that divides the udder in half along the mid-line.

METRITIS: An inflammation of the uterus.

MICROBIAL PROTEIN: Protein of a microbial nature that originates from the degradation of feed proteins to ammonia by existing bacteria in the reticulo-rumen and subsequent utilization of this ammonia to generate new bacteria and new bacterial protein.

MILK (or LACTATION) CURVE: A pictoral presentation of a cow's daily production as she progresses from calving to drying-off.

MILK FEVER: A metabolic disease that occurs in cows at or soon after calving and is characterized by partial muscle paralysis, circulatory collapse and depression of consciousness.

MILK LET-DOWN: The result of various stimuli to a cow to let down her milk for easy removal during milking.

MILK METER: A device for measuring individual cow milk weights and for taking milk samples for subsequent compositional and milk quality analyses.

MILK PIPELINE: The pipe which conveys milk from the milking unit to the milk receiver.

MILK PUMP: An electric pump which receives milk under vacuum from the milk receiver and which discharges it under atmospheric pressure to the farm bulk tank.

MILK RECEIVER: A reservoir that receives milk from the milk pipeline.

MILK: REST RATIO: The percentage of the pulsation cycle that the inflation is open (milking) compared to when it is closed (resting).

MOISTURE (or SANITARY) TRAP: A vessel that separates the milk side of a milking machine system from the vacuum supply side to keep milk and cleaning fluids out of the vacuum system and to prevent back-flow of moisture into the milking or vacuum system.

MONOGASTRIC: A simple-stomached (or one stomach) animal.

NATIONAL IDENTIFICATION PROGRAM (N.I.R.): A national identification program for grade animals.

NATURAL VENTILATION: Ventilation without fans. Air movement through natural means based on the concept that warm air rises and carries moisture with it.

NONPROTEIN NITROGEN (N.P.N.): Nitrogen in feed from nonprotein sources such as urea and ammonia salts.

NUCLEAR TRANSFER: The highly specialized technique of transferring nuclear (genetic or D.N.A.) material from within one cell to another without damage to the outer lining of the cell.

OXYTOCIN: A naturally produced hormone that originates from the anterior pituitary gland of the cow in response to some form of stimulus. Oxytocin is a key component of the milk let-down process that determines how rapidly a cow will let down her milk and the completeness of milking.

PATHOGEN: Any disease producing microorganism.

PEDIGREE INDEX: An estimate of a young bull's future proof for production or type traits based on the performance of individuals in his pedigree.

PH: A measurement of acidity on a scale of 0 to 14. A pH of 7 indicates a neutral solution (neither acidic nor alkaline). Values smaller than 7 are acidic while those exceeding 7 indicate an alkaline situation.

PLATE LOOP COUNT (P.L.C.): A means of measuring and monitoring changes in milk quality. It's a term used to express the number of bacteria forming colonies per millilitre of milk sample tested.

PROLAPSE: An abnormal but serious condition that usually occurs at calving. It is characterized by the inversion and extrusion of the vagina, and in more serious cases the uterus too, outside of the body.

PROGESTERONE: A hormone that is naturally produced and released by the corpus luteum which prevents follicle and egg development and which maintains pregnancy.

PROSTAGLANDIN: A hormone-like substance produced by the uterus which causes the regression of the corpus luteum during the estrous cycle. Estrus (or heat) may be synchronized using a synthetically produced prostaglandin.

PULSATION: The cyclic opening and closing of the teat-cup liner.

PULSATION RATE: The number of pulsation cycles per minute.

PULSATION RATIO: The amount of time a pulsator creates vacuum to open the liner compared with the amount of time it admits air to collapse the liner.

PULSATOR: An electronic or pneumatically operated device that produces the cyclic pressure changes to create pulsation.

PULSATOR LINE: The part of a milking system that supplies vacuum to the pulsators and the milking unit.

QUALIFIED DAM: A non-purebred Holstein cow that has met the specified generation, production and type requirements for entry into the breed herd book.

QUALIFIED ENTRY (Q.E.): A program for upgrading Holstein cattle for entry into the breed herd book.

RECIPIENT: A dairy animal designated to be implanted with an embryo.

REGULATOR: A device designed to maintain a milking system's vacuum at a preset level.

REPEATABILITY: The repeatability or accuracy of a sire's proof.

RETAINED PLACENTA (or AFTERBIRTH): Placenta or afterbirth that is not expelled within eight hours following calving.

RUMEN: The largest of the forestomachs of a ruminant animal.

RUMINANT: An animal which chews its cud and which has a multi-unit stomach comprised of a rumen, reticulum, omasum and an abomasum.

SALMONELLOSIS: Considered a public health hazard, salmonellosis is the clinical signs of a disease caused by salmonella bacteria in livestock.

SCOURS: A slang term for diarrhea in livestock.

SELECTIVE TREATMENT: Refers to treating only clinical or very sick animals, as opposed to mass medication.

SILENT HEAT (or SILENT ESTRUS): Heat (estrus) which occurs without the typical behavioral signs of a normal estrus.

SIMULTANEOUS PULSATION: The cyclic movement of all four liners simultaneously within a cluster.

SIRE PROOF: An official evaluation of a bull's genetic value for production and type traits.

SOLUBLE PROTEIN: That proportion of the feed protein which is soluble and degradable within the reticulo-rumen.

SOMATIC CELL COUNT (S.C.C.): A term used to describe the total number of both epithelial and leucocyte cells in a millilitre of milk. Normal milk would have a SCC comprised of one percent epithelial cells and 99 percent leucocytes.

SPHINCTER MUSCLE: Muscle fibers surrounding the teat canal to keep it closed and to hold milk in, while, at the same time, preventing entrance of microorganisms.

SPRINGING: A slang term for an animal in the latter stages of gestation close to calving.

STREAK CANAL: The short, cylinder-like structure inside the teat that acts as the bridge between the teat cistern and the exterior of the teat end.

STRIP CUP: A cup with a black bakelite plate attached inside. The cup is used to detect abnormal milk in prestripped milk from each quarter prior to unit attachment.

SUBCLINICAL MASTITIS: A mastitis infection of the udder whereby there are no visible signs. Detection is through aids which indicate the presence of an infection based on the number of somatic cells in the milk.

SUBSIDY: A federal grant paid to producers for that proportion of their total milk shipments that is processed for industrial uses.

SUPEROVULATION: The process of hormonally treating an animal to produce and release more than one egg for subsequent fertilization.

TEAT DIP: A protective bactericidal solution applied to teats immediately after each milking.

TIE-STALL HOUSING: A housing system whereby cows are tied up in stalls.

TOTAL ALLOWABLE PRODUCTION (T.A.P.): A term used to designate how many litres of milk a producer can ship on a daily basis.

TOTAL MIXED RATION (T.M.R.): A feeding program whereby all feeds fed (forages and concentrates) are blended and fed together.

TRANSPONDER: An electronic device with electronic circuitry that carries identifying and feeding information unique to the cow wearing that transponder.

TYPE CLASSIFICATION: An official system by which an animal is evaluated on a numerical score of 1 to 9 for each type trait. The evaluation procedure is conducted by a classifier who has been trained on what is desirable for each trait in a breed.

VACUUM GUAGE: A differential pressure gauge that is installed on the vacuum line to indicate the vacuum level of a milking system.

VACUUM PUMP: A pump which removes air from the milking system to create a vacuum.

VACUUM TANK: A tank which increases the internal volume of the milking system in order to reduce vacuum fluctuations within the system.

WEIGH JAR: A calibrated pyrex jar that is used to collect a cow's milk production at one milking and for measuring her production level.

WHITE MUSCLE DISEASE: Known as nutritional muscular dystrophy. Occurs in calves that are born from dams which have been fed diets markedly low in selenium in some cases low vitamin E for the last few months before calving.